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Applicants: Mesarovic et al.al

Serial No.: 09/771,103

Filed: January 26, 2001

Confirm. No. 7709

Title: Efficient PCM Buffer

Art Unit: 2655

Examiner: Abebe, Daniel Demelash

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313- 1450

RESPONSE TO OFFICE ACTION

In response to the Final Office Action mailed May 10, 2004 (Paper No. 8), Applicants respectfully request that the Examiner allow the claims to pass to issue in view of the following remarks.

In the Final Office Action mailed May 10, 2004, the Examiner rejected Claims 1 – 19 under 35 U.S.C. 112, first paragraph, for failing to comply with the written description requirement. In particular, the Examiner submits that the claim feature "...the portion of the channels are proportional to a decode time", as recited in the claim, is not adequately described in the specification and therefore constitutes new matter. Applicants respectfully traverses these rejections.

In Applicants' Response to Office Action, mailed February 20, 2004, Applicants presented amended independent apparatus Claim 1 to more particularly point out and distinctly claim a multiple channel audio decoder for decoding at least two channels of audio data, and which includes a buffer having first and second channel portions, and 021615.500062 Dallas 1764402.1

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wherein a difference in size between the first-channel portion and the second channel portion is proportional to a decode time of a selected one of two channels of the encoded audio data. Similar amendments were made to independent Claims 10 and 15.

Contrary to the Examiner's assertion, sufficient antecedent basis for the amendments to Claims 1, 10, and 15 is found in the Detailed Description of the present application in Figure 8, and the associated text on Pages 16 – 17. Applicants particularly point out the paragraph beginning on Line 22 of Page 16, and continuing to Line 5 of Page 17, which provides a particular example of the proportional relationship between channel decode time and buffer size in a multiple-channel audio decoding system, according to the inventive principles. For convenience, Applicants reproduces this paragraph herein:

For example, under an exemplary 5.1 AAC decoding multiple-channel format, the channels arrive in the following order: center (C), left (L), right (R), left surround (Ls), right surround (Rs), and low-frequency effect (LFE). Since the C channel arrives first in the stream, as described above the C channel buffer 802 is maximized, for example, to 2x1024 words. Then, since the L channel is decoded next, its decode time is preferably estimated for the worst-case encoding and sample rate, and this time is converted into number of playable samples. *The L channel PCM buffer size 804 is thus made smaller than the PCM buffer for C channel by the number of samples that occur during that L-channel decode time, since PCM samples from all 6 PCM buffers will be played back during the L-channel decode.* Similarly, the size of PCM buffer for each channel decoded subsequently, can be decreased from the previous channel PCM buffer. (Emphasis added)

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In sum, Applicants have clearly described in the specification, at a minimum on Pages 16 and 17, buffering in an audio decoder in which two buffer portions are utilized, and wherein a size difference between the two portions is proportional to a decode time of a selected one of two channels of the encoded audio data. Applicants therefore respectfully request that the rejections of Claim 1-19 be withdrawn and that Claims 1-19 be passed to issue.

No new matter has been added; the claims have been merely amended to more particularly point out and distinctly claim the subject matter Applicants believe is inventive.

Applicants respectfully submit that the Claims as they now stand are patentably distinct over the art cited.

Also, the Commissioner is hereby authorized to charge any fees or credit any overpayment to Deposit Account Number 20-0821.

If the Examiner has any questions or comments concerning this paper or the present application in general, the Examiner is invited to call the undersigned at (214) 969-1749.

Respectfully submitted,
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